



SERIAL NO. 10/814,913  
JUTTU, SMITH

PATENT APPLICATION  
STC-02-0004 DIV

### **Listing of Claims in the Application**

1 (Canceled).

2 (Canceled).

3 (Canceled).

4 (Canceled).

5 (Canceled).

6 (Canceled).

7 (Canceled).

8 (Canceled).

9 (Canceled).

10 (Canceled).

11 (Canceled).

12 (Canceled).

13 (Canceled).

14 (Canceled).

15 (Canceled).

16 (Canceled).

17(Currently amended). A process for synthesizing an aluminum-silicon-germanium-platinum zeolite catalyst comprising:

- a) preparing a zeolite containing aluminum, silicon and germanium;
- b) depositing a metal consisting essentially of platinum on the zeolite; ~~and~~
- c) calcining the zeolite to form a catalyst; and

d) treating the catalyst first with hydrogen, second with a sulfur compound; and then again with hydrogen.

18(Original). The process of claim 17 wherein the platinum is deposited by cationic exchange.

19(Original). The process of claim 17 wherein the platinum is deposited by impregnation.

20(Original). The process of claim 17 wherein the zeolite has an MFI, FAU, TON, MFL, VPI, MEL, AEL, AFI, MWW or MOR structure.

21 (Canceled).

22 (Currently amended). An aluminum-silicon-germanium-platinum zeolite catalyst for aromatization of hydrocarbons comprising:

a) a microporous aluminum-silicon-germanium zeolite; ~~and~~

b) a metal consisting essentially of platinum deposited on the microporous aluminum-silicon-germanium-~~platinum~~ zeolite; and

c) a sulfur compound.

23(Original). The catalyst of claim 22 wherein the silicon-germanium to aluminum atomic ratio is greater than 25:1.

24(Original). The catalyst of claim 22 wherein the silicon-germanium to aluminum atomic ratio in the range of from 45:1 to 250:1.

25(Original). The catalyst of claim 22 wherein the silicon-germanium to aluminum atomic ratio in the range of from 50:1 to 100:1.

26(Original). The catalyst of claim 22 wherein the silica to germania ratio is in the range of from 100:1 to 9:1.

27(Original). The catalyst of claim 22 wherein the silica to germania ratio is in the range of from 50:1 to 10:1.

28(Original). The catalyst of claim 22 wherein the silica to germania ratio is in the range of from 25:1 to 11:1.

29(Original). The catalyst of claim 22 wherein platinum is present in the range of from 0.05% to 3%.

30(Original). The catalyst of claim 22 wherein platinum is present in the range of from 0.2% to 2%.

31(Original). The catalyst of claim 22 wherein platinum is present in the range of from 0.2% to

1.5%.

32(Original). The catalyst of claim 22 wherein the pore size of the zeolite is in the range from 5 to 100 angstroms.

33(Original). The catalyst of claim 32 wherein the pore size of the zeolite is in the range from 5 to 50 angstroms.

34(Original). The catalyst of claim 33 wherein the pore size of the zeolite is in the range from 5 to 20 angstroms.

35(Original). The catalyst of claim 22 wherein the zeolite has a MFI, FAU, TON, MFL, VPI, MEL, AEL, AFI, MWW or MOR structure.

36 (Canceled).

37(Currently amended). The catalyst of claim ~~36~~22 wherein the sulfur compound is  $H_2S$ ,  $C_nH_{2n+2}S$  where  $n = 1-20$ ,  $C_nH_{2n+1}S_2$  where  $n = 2-22$  or  $C_nH_{2n+1}S$  where  $n = 2-22$ .

38 (Canceled).

39 (Canceled).

40 (Canceled).

41 (Canceled).

42 (Canceled).

43(Original). The catalyst of claim 22 wherein the catalyst is of the formula  
$$[H^+Pt][Si_{91}Ge_4Al_1O_{192}]-MFI.$$

44(Original). The catalyst of claim 22 wherein its X-ray diffraction pattern includes the values given in Table 5 of this specification.

45(Original). A process for pretreating a catalyst for aromatization of hydrocarbons comprising:

- a) selecting an aluminum-silicon-germanium zeolite on which platinum has been deposited;
- b) treating the zeolite with hydrogen;
- d) treating the zeolite with a sulfur compound; and
- e) treating the zeolite a second time with hydrogen.

46(Original). The process of claim 45 wherein the zeolite is bonded with amorphous alumina prior to the first treatment step.

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47(Original). The process of claim 45 wherein the sulfur compound is  $H_2S$ ,  $C_nH_{2n+2}S$  where  $n = 1-20$ ,  $C_nH_{2n+1}S_2$  where  $n = 2-22$  or  $C_nH_{2n+1}S$  where  $n = 2-22$ .